

Mark Scheme (Results)

Summer 2010

GCSE

GCSE Design and Technology:
Textile Technology (3971)
Paper 2H
Higher Written Paper.

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1(a)(i)	<p>One point and reason from: Quality Point: Well made eg. stitching secure and accurate, / edges finished accurately/appropriately, /pockets/zips secure (1) Reason: Item worn by children so must be firmly stitched/components attached securely/stay looking good (1)</p> <p>Point: Durable/hardwearing fabric (1) Reason: To withstand wear and tear/ensure it lasts (1)</p> <p>Point: Lightweight (1) Reason: Comfortable to wear/ warmth without weight (1)</p> <p>Point: Good quality components (zip) (1) Reason: To withstand wear and tear (1)</p>	(2)
1(a)(ii)	<p>One point and reason from: Environmental Point: Reduced obsolescence /not a high fashion item (1) Reason: Can be handed down/reused (1)</p> <p>Point: Washed easily/machine washable at 30°C/crease resist/no iron (1) Reason: Less energy used for washing/drying / ironing (1)</p> <p>Point: Durable/hardwearing/ last a long time (1) Reason: Reduced amounts in landfill (1)</p> <p>Point: Make use of recycled materials/plastic bottles (1) Reason: Reduce environmental impact (1)</p>	(2)
1(a)(iii)	<p>One point and reason from: Safety Point: Zips easy to use (1) Reason: Children can use themselves (1)</p> <p>Point: Elasticated waist (1) Reason: Easy to put on and take off (1)</p> <p>Point: Components attached securely (1) Reason: No choking hazard (1)</p> <p>Point: No sharp/dangerous components (1) Reason: children cannot hurt themselves (1)</p> <p>Point: Flame resistant (1) Reason: No fire danger for children (1)</p> <p>Point: No drawstrings (1) Reason: Danger of strangulation/ legal requirement (1)</p> <p>Point: Correct size for child (1) Reason: No tripping /catching hazards (1)</p>	(2)

1b	<p>Two reasons given from:</p> <ul style="list-style-type: none"> • Absorbent • Comfortable/cool to wear (1) • Easy to wash/ can be washed at 30 (1) • Can be washed at higher temps to remove stains (1) • Stretches / gives in wear /allows movement(1) <p style="text-align: right;">(2x1)</p>	(2)
1c	<p>Two reasons given from:</p> <ul style="list-style-type: none"> • Produces identical results (1) • Consistent/accurate/high quality standard (1) • Can be used repeatedly / Patterns stored in memory (1) • Colours can be adjusted easily (1) • Quick /cheap to produce (1) • Easy to produce in quantity/ batch (1) • Can be easily personalised (1) <p style="text-align: right;">(2x1)</p>	(2)
1d	<p>Two properties with reasons from:</p> <p>Property: repels water and oil based spills /resists most stains (1) Reason: Easy to care for /safer to wear (1) <i>Do not accept waterproof</i></p> <p>Property: Breathable (1) Reason: comfortable to wear / won't sweat(1)</p> <p>Property: Strong/hardwearing/durable/ resilient (1) Reason: needs to withstand wear and tear/ falling down /last a long time (1)</p> <p>Property: Dries quickly/ no iron/ crease resist/ wash at 30 (1) Reason: Easy to care for (1)</p> <p>Property: Lightweight/soft (1) Reason: comfortable to wear /not heavy (1)</p> <p style="text-align: right;">(2x1) (2x1)</p>	(4)
1e	<p>One reason explained from:</p> <ul style="list-style-type: none"> • To check tolerance (1) levels for accurate sizing (1) • Stitching good/secure/strong (1)so that seams will not come undone /good quality(1) • The overlapped finish (1) is consistent/accurate (1) <p style="text-align: right;">(2x1)</p>	(2)

1f	<p>One reason explained from:</p> <ul style="list-style-type: none"> • Produces a napped /fluffy/raised/pile (1) surface which makes the fabric thicker/ softer/ warmer (1) <p style="text-align: right;">(2x1)</p>	(2)
1g	<p>One example explained of how purpose is achieved:</p> <p>(i) keep the child warm:</p> <ul style="list-style-type: none"> • Zips (1) go right up to the stand up collar (1) • Fleece top (1) is made of a brushed/ warm fabric (1) • Trousers are long (1) so cover all the legs (1) • Layers (1) of clothing trap air so increase warmth (1) • High neck/long sleeves (1) keep body covered /warm (1) <p>(ii) be easy to care for:</p> <ul style="list-style-type: none"> • All fabrics easily washable by machine at 30 /low temperature(1) • No need to iron as all fabrics crease resistant (1) • Drip dry so quick to launder • Laminated fabric for trousers is stain resistant /easy care(1) <p style="text-align: right;">(2x1) (2x1)</p>	(4)
Total for question 1		22 Marks

Question Number	Answer	Mark
2a	<ul style="list-style-type: none"> • Smoother (1) • Lustrous /shinier (1) • Watermark effect/moiré (1) <p style="text-align: right;">(2x1)</p>	(2)
2b	<ul style="list-style-type: none"> • Stronger (1) • Softer (1) • Shiny/lustrous(1) • More absorbent (1) • Easier to dye (1) • Resists mildew (1) <p style="text-align: right;">(2x1)</p>	(2)
2c	<ul style="list-style-type: none"> • Biopolishing (1) • Biostoning (1) <p style="text-align: right;">(2x1)</p>	(2)
2d	<ul style="list-style-type: none"> • Block printing (1) • Roller printing (1) • Screen printing (1) • Transfer printing (1) • Digital printing (1) • Laser printing (1) <p style="text-align: right;">(2x1)</p>	(2)
2e	<ul style="list-style-type: none"> • Set up computerised machine with selected/coloured thread (1) • Place pocket piece under presser foot in correct place /in a frame(1) • Allow machine to create the pattern (1) • One colour is completed at a time/ set up next colour (1) • Watch and guide the computerised sewing machine (1) <p>Any 3 stages are acceptable but must be in the correct order.</p> <p style="text-align: right;">(3x1)</p>	(3)
2f	<ul style="list-style-type: none"> • Made in standard sizes (1) • Fixed numbers produced (1) • Identical items produced (1) • Assembled quickly (1) • Priced appropriately /cheaper than one off(1) • Produce a good quality/accurate product (1) • New ideas easily introduced/up to date/on trend (1) <p style="text-align: right;">(2x1)</p>	(2)

2g	<ul style="list-style-type: none"> • Fully automated system of production so no duplication of work/reduces production time • Fewer workers needed so reduces wages bill/cuts costs • Fewer errors so quality & reliability increased • Increased profit margins due to lack of waste through rejection by quality control • Faster & more flexible manufacturing because machines easily re-programmed • Design development, production schedules and manufacturing operation all in one system therefore allows different pieces of equipment to communicate <p style="text-align: right;">(2x1) (2x1)</p>	(4)
2h	<ul style="list-style-type: none"> • Retrieve stored blocks to make alterations (1) • Faster process than by hand (1) • CAD can work out all calculations for grading / different sizes (1) • Make changes/adjustments easily (1) • Reduce the cost of the product (1) <p style="text-align: right;">(3x1)</p>	(3)
2i	<ul style="list-style-type: none"> • Checks for acceptable tolerance levels when stitching seams (2) • Checks are done automatically / identifies problems and production changed if necessary (2) • Problems identified early meaning less wastage/higher standards (2) • Knitting machines have stitch sensors fitted to them in order to regulate the fabric (2) • Can predict the failure of a machine before it happens (2) <p style="text-align: right;">(2x1)</p>	(2)
Total for question 2		22 Marks

Question Number	Answer	Mark
3	<p>Each point of the specification has two marking points.</p> <p>1 mark should be awarded for evidence of each point of specification resolved in the design. For each specification point with both elements viably satisfied 2 marks For each specification point with only one element viably satisfied 1 marks Where an answer does not viably answer a specification point 0 marks</p> <p>Candidates may answer any specification point in either graphical form or by annotation.</p> <p>No marks are awarded for quality of communication.</p>	
3a	<p>Design idea 1 Teach skills to children aged 4-6 in a fun way.</p> <ul style="list-style-type: none"> • Evidence of educational value e.g. colours, numbers, letters, sounds, manipulative skills etc • Evidence of fun e.g. bright colours, decoration, imaginative design idea. <p>Be made from durable fabric and be easy to care for.</p> <ul style="list-style-type: none"> • Evidence of durable fabric e.g. fabric annotated • Evidence of easily cared for e.g. washable, wipe clean, finishes applied etc <p>Be easy to use and store easily.</p> <ul style="list-style-type: none"> • Evidence of easy to use e.g. letters un-stick easily, pages correct size, pockets good size etc. • Evidence of store easily e.g. folds/rolls up, fits into protective cover etc <p>Easily suitable for batch production.</p> <ul style="list-style-type: none"> • Evidence of suitability for batch production e.g. simple design/ features, no hand decoration etc • E.g. CAM/ computerised embroidery for decoration 	(8)

Graphical Solution 1

My Calendar

Days	Months
Sunday	Day
Monday	Date
	Month
	Year
2008	Weather
2009	Season
1	2
3	

Thursday	January
16	February
June	
2010	
Sunny	
Summer	

Seasons	Weather
Spring Autumn	Cloudy Sunny
Winter	Windy Rain

← (a) educational calendar for 4-6 yr old

← (b) fun to stick correct pieces in place

← (c) durable cotton drill

← (d) easy to wipe

← (e) pieces have velcro to stick

← (f) can be rolled up

← (g/h) writing done by computerised sewing machine easily

Possible graphical solution

Design idea 2

To score a mark for Design Idea 2, each specification point must be resolved again in the second design idea but the second design idea **must be technically/conceptually different in design and construction** from the first and not a simple variation on a theme to score the mark.

Use exactly the same criteria as design idea 1 to mark design idea 2.

A different indication of educational value (1)

A different indication of teaching in a fun way (1)

A different indication of durable fabric (1)

A different indication of easy to care for (1)

A different indication of easy to use (1)

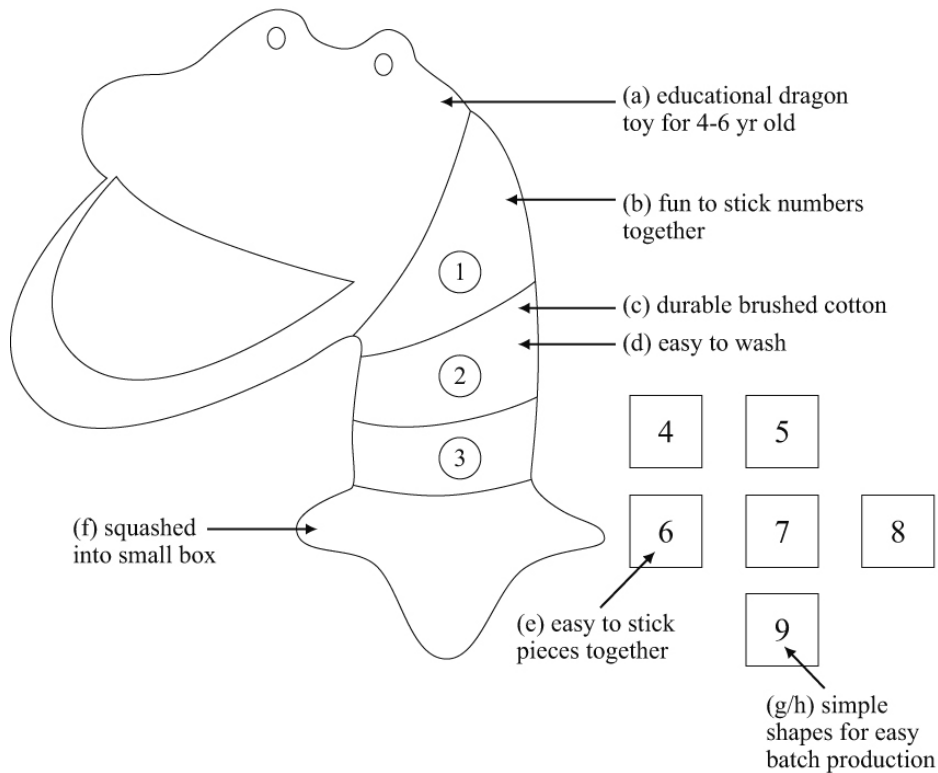
A different indication of easy to store (1)

A different reason of suitability for being easily batch produced (1)

A different reason of suitability for being batch produced (1)

(8)

Graphical Solution 2



Possible graphical solution

3(b)

Each point clearly evaluated

If a candidate has indicated design idea 1 and then evaluates design idea 2 for all or part of (i), (ii) & (iii) then the idea in greater evidence should be marked.

The evaluation of the design must contain reference to either positive or negative aspects not just simply a description of the design.

Award 1 mark for a correct evaluation/justification relating to each design feature and how it succeeds or fails.

Repetition of original specification scores 0

Marks may be awarded for two justifications of one specification point

3(b)(i)	Evaluation of teach skills to children aged 4-6 in a fun way. Evaluative comments positive or negative on: <ul style="list-style-type: none"> • Why chosen educational toy is suitable for 4-6 yr olds • Justification of fun <p style="text-align: right;">(2x1)</p>	(2)
3(b)(ii)	Evaluation of be made from durable fabric and be easy to care for. Evaluative comments positive or negative on: <ul style="list-style-type: none"> • Justification of fabric chosen for durability • Justification of why easy to care for <p style="text-align: right;">(2x1)</p>	(2)
3(b)(iii)	Evaluation of be easy to use and store easily. Evaluative comments positive or negative on: <ul style="list-style-type: none"> • Justification of ease of use • Justification of easy storage <p style="text-align: right;">(2x1)</p>	(2)
Total for question 3		22 Marks

Question Number	Answer	Mark
4(a) (i)	<ul style="list-style-type: none"> • Fine (1) • Soft (1) • Smooth (1) • Lustrous / shiny (1) • Lightweight (1) • Absorbent (1) • Relatively strong/ reduced strength when wet (1) • Good elasticity (1) • Drapes well (1) • Resilient /doesn't crease easily(1) • Damaged by sweat/perfume (1) • Good insulator/warm in winter/cool in summer (1) <p style="text-align: right;">(4x1)</p>	(4)
4(a)(ii)	<ul style="list-style-type: none"> • Long /continuous (1) • Straight (1) • Smooth (1) • Flat/ribbon like/round (1) <p style="text-align: right;">(2x1)</p>	(2)
4(b)	<ul style="list-style-type: none"> • S (1) • Z (1) <p><i>Only answers (clerical)</i></p> <p style="text-align: right;">(2x1)</p>	(2)
4(c) (i)	<ul style="list-style-type: none"> • Polyester & cotton (1) • Cotton & viscose (1) • Denim & elastane etc (1) • <i>Accept any suitable combination (1)</i> <p style="text-align: right;">(1x1)</p>	(1)
4(c) (ii)	<ul style="list-style-type: none"> • Polyester creases less than cotton so now easier to iron • Polyester is easier to care for/ wash/drip dry/ so cotton properties improved • Elastane improves the elasticity of otherwise stiff denim • <i>Answers must relate to answer given in(ci)</i> <p style="text-align: right;">(2x1)</p>	(2)
4(d)	<ul style="list-style-type: none"> • Fabric changes colour in intense sunlight so warns wearer of duration of UV exposure/ risk of cancer • Clubwear will change colour when exposed to UV light making it a fun item to wear • Combat uniforms change colour to blend in with surroundings (camouflaged) <p style="text-align: right;">(2x1)</p>	(2)

4(e)(i)	<ul style="list-style-type: none"> • Consumers see new products in the media/shops and 'need' to buy it even though they may not have the money to afford it. • Consumers can see this as a waste of resources and a waste of their money so do not follow fashion trends • Consumers feel they should continue to wear them but do not want to as they are not fashionable • Consumers do not want to throw away clothes but don't wear them so clutter their storage space <p style="text-align: right;">(2x1)</p>	(2)
4(e)(ii)	<ul style="list-style-type: none"> • Products competitively priced (1) • Gives pleasure to those who love to shop (1) • Fresh supply of different clothes to buy (1) <p style="text-align: right;">(1x1)</p>	(1)
4(f)	<ul style="list-style-type: none"> • Growing cotton takes up large amounts of land and in many countries this is more needed for growing crops • Needs large amounts of water to grow when water is needed to drink • Needs fertilisers/pesticides which can cause health problems for the growers/ harvesters • Cotton needs large amounts of water and chemicals to clean it prior to processing • Pesticides are needed to protect the crop which kills insects causing damage to food chains <p style="text-align: right;">(2x1) (2x1)</p>	(4)
4(g)	<ul style="list-style-type: none"> • Natural resources not used as they are made from chemicals • No fields used up to grow so more available for growing food • No pesticides used so less pollution in environment/damage to ecosystems • Clothing does not rot/ last longer so consumer does not have to replace items as quickly. • Plastic bottles can be used to make synthetic fibres so waste reduced • Can be strong fabrics with resistance to chemicals/sun/flame/bacteria/mould etc so will retain good appearance longer <p style="text-align: right;">(2x1)</p>	(2)
Total for question 4		22 Marks
Total for paper		88 Marks

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